

D2

00010000 (2479x3508x2 tiff)

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
3 January 2003 (03.01.2003)

PCT

(10) International Publication Number  
**WO 03/001776 A1**

(51) International Patent Classification<sup>7</sup>: **H04M 1/18, H05K 5/06, G06F 1/16**

(74) Agent: CHRISTY, Robert, M.; The Dow Chemical Company, Intellectual Property, P.O. Box 1967, Midland, MI 48641-1967 (US).

(21) International Application Number: **PCT/US02/17728**

(22) International Filing Date: 4 June 2002 (04.06.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/300,280 22 June 2001 (22.06.2001) US

(71) Applicant: DOW GLOBAL TECHNOLOGIES INC. [US/US]; Washington Street, 1790 Building, Midland, MI 48674 (US).

(72) Inventors: HUS, Michael, E.; 5114 Natalie Court, Midland, MI 48640 (US). CLEEREMAN, Robert, J.; 5908 Wimbledon Court, Midland, MI 48642 (US). WENZEL, Jeffrey, D.; 500 North Miller Road, Saginaw, MI 48609 (US). LANGMAID, Joseph, A.; 1726 Gun Club, Caro, MI 48723 (US). PETERSON, Curtis, E.; 2000 Candlestick Lane, Midland, MI 48642 (US). HOAGLAND, Mary, M.; 1806 Brookfield Drive, Midland, MI 48642 (US). FLAVIN, Frank, J.; 1808 Candlestick Lane, Midland, MI 48642 (US).

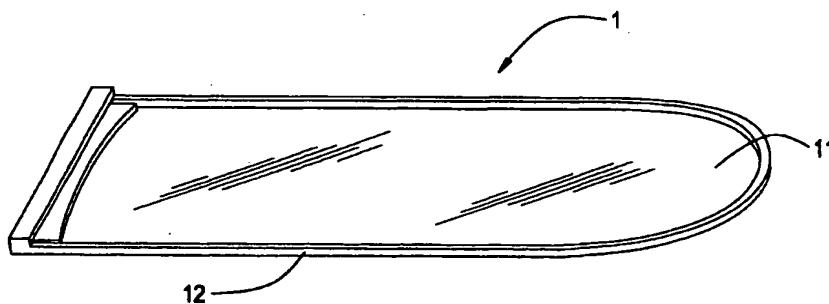
(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EB, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:  
— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROTECTIVE SEALABLE TRANSPARENT FLEXIBLE MEMBRANE FOR ELECTRONIC TOUCH SCREENS



WO 03/001776 A1

(57) Abstract: A protective sealable transparent membrane (1) comprised of a film (11) and a frame (12) which is suspended above a touch screen of a personal electronic device (43) encased in a protective enclosure (1). The protective sealable transparent membrane (1) allows activation of the touch screen, scratch resistance and a water and dust tight seal.

**PROTECTIVE SEALABLE TRANSPARENT FLEXIBLE MEMBRANE FOR ELECTRONIC TOUCH SCREENS**

The present invention relates to a protective sealable transparent membrane which  
5 covers the touch screen of a personal electronic device encased in a protective enclosure.

Personal electronic devices, such as hand held computers, cell phones, pagers, personal digital assistants (PDAs), gaming devices, electronic music players, voice recorders, global positioning systems (GPS) and the like, have become common place in today's society. These personal electronic devices have found utility in all aspects of life  
10 including personal and/or professional activities. A touch screen is commonly used to input and view data into personal electronic devices. The advantage of a touch screen is that the operator may simply touch the display object or portion of the screen to highlight or select or otherwise input information.

In most environments, and in outdoor environments in particular, personal electronic  
15 devices are subject to liquids, dust, foods, grease, moisture and other contaminants. Contamination of the touch screen can adversely affect the operability of the personal electronic device. Following contamination, these devices need to be cleaned, further exposing the personal electronic devices to harsh cleaning fluids, liquids and solutions. Thus, in order to operate properly in harsh environments, an enclosure with a protective  
20 transparent membrane having a liquid tight seal is needed to protect sensitive electronic display elements.

Prior art techniques have attempted to solve this problem in several ways. Typically, an enclosure with a front cover for a touch screen contains one or more gaskets. Not only do gaskets leak with time and exposure to environmental contamination and  
25 cleaning fluids, but they also require the use of additional assembly steps and addition of the gasket(s) itself. The gasket must be attached and seated properly in order to function effectively. The use of gaskets requires multiple operations and parts which makes front covers using gaskets expensive to manufacture. Gaskets also tend to leak after a relatively short period of time due to the expansion and contraction of the gasket itself due to  
30 temperature changes in the environment.

Other attempts to solve the problem involve an enclosure with an openable/closeable protective lid. These solutions are less than desirable as they are not sealed to liquids and must be opened to activate the touch screen, thus providing opportunities for exposing the touch screen to potential contamination. One such example is taught in US-A-5,990,874 of

WO 03/001776

PCT/US02/17728

a personal electronic device with an attachable openable/closeable lid where there is limited capability to activate the touch screen by depressing the protective lid while closed. Unfortunately, the lid does not provide a seal to liquids and the elements and the only function through the lid is the ability to turn the personal electronic device on or off.

5        Accordingly a need exists for a protective sealable transparent flexible membrane for personal electronic devices having touch screens encased in a protective enclosure, which allows activation of the touch screen through the membrane, provides an effective liquid and dust tight seal and protects the touch screen from the environment and elements. Further, it is desirable that the number of parts, assembly steps and hence the cost can be  
10      reduced.

FIG. 1 is a perspective view showing the protective transparent flexible membrane.

FIG. 2 is a perspective view of the protective transparent flexible membrane and underside of the top portion of the protective enclosure for a personal electronic device that the protective transparent flexible membrane fits into.

15      FIG. 3 is an exploded perspective view of the protective transparent flexible membrane, top portion of the protective enclosure, a personal electronic device and the mating bottom portion of the protective enclosure.

It is an objective of the invention to provide a protective sealable transparent flexible membrane that fits into a protective enclosure for a personal electronic device through  
20      which the touch screen can be viewed.

It is another objective of the invention to provide a protective sealable transparent flexible membrane that when in place in the protective enclosure provides protection and scratch resistance for the touch screen of the personal electronic device.

It is another objective of the invention to provide a protective sealable transparent flexible membrane that when in place in the protective enclosure provides a liquid, especially water, tight seal.

It is another objective of the invention to provide a protective sealable transparent flexible membrane that when in place in the protective enclosure provides a particulate, especially dust, tight seal.

30      It is yet another objective of the invention to provide a protective sealable transparent flexible membrane that when in place in the protective enclosure allows for activation of the touch screen on the personal electronic device through the membrane.

It is still a further objective of the invention to provide a protective sealable transparent flexible membrane that is easy to replace.

It is still a further objective of the invention to provide a protective sealable transparent flexible membrane that is easy to manufacture.

5 An embodiment of the present invention is a protective sealable transparent flexible membrane comprising a film and a frame, which fits into a protective enclosure and is suspended above a personal electronic device, said protective sealable transparent flexible membrane provides a liquid and particulate tight seal.

10 In a further embodiment of the present invention, the film is a flexible transparent thermoplastic, preferably a transparent thermoplastic polyurethane elastomer.

In a further embodiment of the present invention, the frame is a flexible thermoplastic elastomer, preferably a thermoplastic polyurethane elastomer.

15 In a further embodiment of the present invention, the film and frame are the same or different flexible thermoplastic elastomer, preferably the same or different thermoplastic polyurethane elastomer.

In a further embodiment of the invention the film is a flexible thermoplastic, preferably a thermoplastic urethane elastomer, with a hardness of between Shore 50 A to Shore 65 D.

20 In yet a further embodiment of the present invention, the protective sealable transparent flexible membrane comprises buttons, preferably molded-in buttons.

In yet a further embodiment of the invention, the protective sealable transparent flexible membrane comprises decorative printing.

25 The present invention is a protective sealable transparent flexible membrane. Said protective sealable transparent flexible membrane fits into a protective enclosure which houses a personal electronic device having a display and/or touch screen, such as a hand held computer, cell phone, a pager, a personal digital assistant (PDA), a gaming device, an electronic music player, a voice recorder, a global positioning system (GPS) and the like. The protective sealable transparent flexible membrane 1 shown in FIG. 1 having a top side and an underside and comprising a film 11 and a frame 12. As shown in FIG. 2, the 30 protective sealable transparent flexible membrane 1 fits into the underside of the top portion of a protective enclosure 21 having an under side 22 and a top side 23. The protective sealable transparent flexible membrane 1 can fit into the topside or underside of the top portion of the protective enclosure 21. The frame 12 forms a mechanical seal with a mating

WO 03/001776

PCT/US02/17728

recess 24 in the top portion of the protective enclosure 21. The top portion of the protective enclosure 21 mates with a bottom portion of the protective enclosure 31 as shown in FIG. 3 to form the protective enclosure for a personal electronic device 43.

The film 11 can be made from any translucent or preferably transparent 5 thermoplastic by any known film making process known in the art. Preferably, the film is made from a translucent or transparent polyamide, polyurethane (PU), polycarbonate (PC), polyvinyl chloride (PVC), polyolefin (PO), such as polyethylene (PE) and polypropylene (PP), polyacrylate, polyester, polysiloxane, polystyrene (PS), styrene and acrylonitrile copolymer (SAN) or mixtures thereof. Preferably the film is a thermoplastic polyurethane 10 (TPU). Preferably the film 11 is a thermoplastic elastomer.

The film is must allow for activation of the touch screen through it, for example by depressing the film. Preferably the film is an elastomer. Moreover, the film has good flex 15 fatigue resistance so as to recover its original position after being depressed when activating the touch screen, rigid enough to maintain its position above the touch screen so as to minimize unwanted screen activation, good hardness so as to afford scratch resistance, good solvent resistance and good long term creep properties so that it will not sag over time. Preferred hardness is equal to or greater than Shore 50 A and equal to or less than Shore 65 D.

Preferably the film 11 has a thickness equal to or greater than 0.001 millimeter 20 (mm), preferably equal to or greater than 0.01 mm, more preferably equal to or greater than 0.02 mm and most preferably equal to or greater than 0.04 mm. Preferably the film 11 has a thickness equal to or less than 0.5 mm, preferably equal to or less than 0.1 mm, more preferably equal to or less than 0.08 mm, even more preferably equal to or less than 0.06 mm and most preferably equal to or less than 0.05 mm.

The frame 12 can be made from any thermoplastic elastomer which can (1) be 25 adhered to the film and (2) make a liquid and particulate tight mechanical seal when fitted into the recess 24 in the top portion of the protective enclosure 21. Suitable elastomers are described, for example, in Billmeyer, F., *Textbook of Polymer Science*, Interscience Publishers, New York, N.Y. (1965) and in Kirk-Othmer *Science of Chemical Technology* 4<sup>th</sup> 30 Ed, John Wiley & Sons, New York N.Y. (1993). Preferably the frame is made from a thermoplastic elastomer such as thermoplastic polyolefin (TPO), polyethylene, such as low density polyethylene (LDPE), ethylene and vinyl acetate copolymer (EVA), ethylene and propylene copolymers (EP), polyvinyl chloride, polyurethane, polyamide, polyester and

mixtures thereof. Preferably the frame is made from a thermoplastic polyurethane, such as PELLETHANE™ 2102-75A available from The Dow Chemical Company.

The film 11 and the frame 12 may be made from different thermoplastic elastomers or the same thermoplastic elastomer. Preferably the film 11 and the frame 12 are made 5 from thermoplastic polyurethane.

The protective sealable transparent flexible membrane 1 is a single part, but the film 11 and the frame 12 may be one or more distinct parts. If the film 11 and frame 12 are a single part, it must comprise a translucent or transparent thermoplastic elastomer. If the film 11 and frame 12 are two or more parts, the frame can be made by any known plastic 10 processing technique, such as injection molding, thermoforming, extrusion and die cutting, and the like. The film 11 and the frame 12 may be attached to one another by any means known in the art to form the protective sealable transparent flexible membrane, for example by a mechanical bond or physically with adhesives, solvent bonding, heat staking, sonic welding or insert molding. A preferable method of bonding 11 to 12 is insert molding, for 15 example injection molding or thermoforming the frame 12 over the film 11 to form the protective sealable transparent flexible membrane 1.

The protective sealable transparent flexible membrane can vary in size, preferably it enables a view of the personal electronic device within the protective enclosure and more preferably a view of the touch screen of the personal electronic device 43 housed within the 20 protective enclosure.

#### EXAMPLE

The following example serves to demonstrate an embodiment of the invention but is not intended to limit the scope of the invention.

A thermoplastic polyurethane flexible film available as PT9200 U type S-2332, 25 natural/clear from Deerfield having a thickness of 0.043 mm and a hardness in the range of Shore 50A to Shore 65 D is used. The frame comprises PELLETHANE 2102-75A from the Dow Chemical company. The protective sealable transparent flexible membrane is formed by insert injection molding the frame onto the film in an injection molding machine having a mold cavity in the shape of the frame. A piece of the PT9200 U type S-2332 film, larger 30 than the frame cavity, is placed between the mold halves, the mold is closed and PELLETHANE 2102-75A is insert molded onto the PT9200 U type S-2332 film. The PELLETHANE 2102-75A is dried at a temperature between 80 to 95°C and the molding conditions are a melt temperature between 200 to 215°C with a mold temperature between

WO 03/001776

PCT/US02/17728

15 to 60°C. The combined frame and film are removed from the mold and excess film is die cut away to provide a protective sealable transparent flexible membrane of the desired shape.

The resulting protective sealable transparent flexible membrane is placed into a top portion of a protective enclosure such that the frame mates with a recess in the top portion of the protective enclosure to form a water and dust tight seal. A personal electronic device is placed in the protective enclosure and the top portion of the protective enclosure is mated with the bottom portion of the protective enclosure. The resulting protective sealable transparent flexible membrane allows for activation of the touch screen as well as good scratch resistance, water and dust resistance.

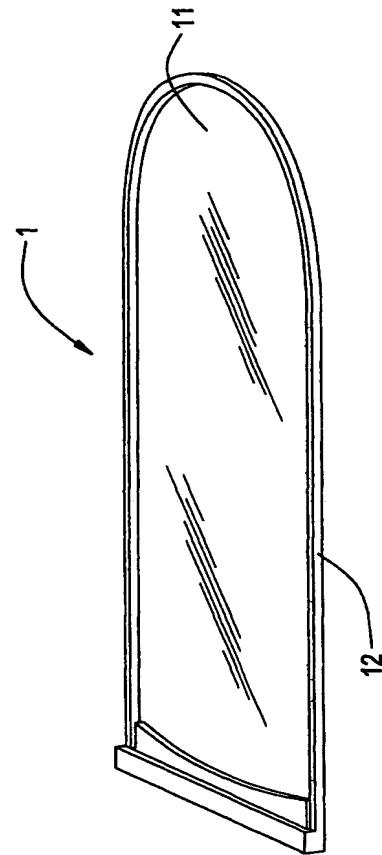
5

10

**CLAIMS:**

1. A protective sealable transparent flexible membrane comprising a film and a frame, which fits into a protective enclosure for a personal electronic device wherein said membrane is suspended above the personal electronic device allowing activation of the personal electronic device and provides a liquid and particulate tight seal.
2. The protective sealable transparent flexible membrane of Claim 1 wherein the film comprises a transparent thermoplastic elastomer.
3. The protective sealable transparent flexible membrane of Claim 2 wherein the film comprises a transparent thermoplastic polyurethane.
- 10 4. The protective sealable transparent flexible membrane of Claim 1 wherein the frame comprises a thermoplastic elastomer.
5. The protective sealable transparent flexible membrane of Claim 4 wherein the frame comprises a thermoplastic polyurethane.
- 15 6. The protective sealable transparent flexible membrane of Claim 4 wherein the frame has a hardness between Shore 50 A to Shore 65 D.
7. The protective sealable transparent flexible membrane of Claim 1 further comprising molded-in buttons.
8. The protective sealable transparent flexible membrane of Claim 1 further comprising decorative printing.

FIG. 1



2/3

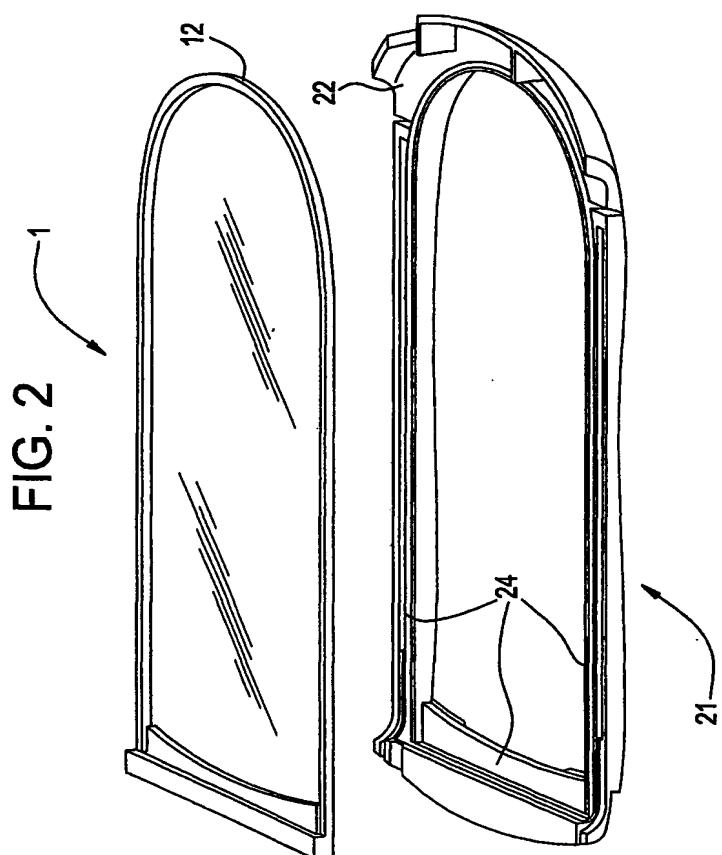
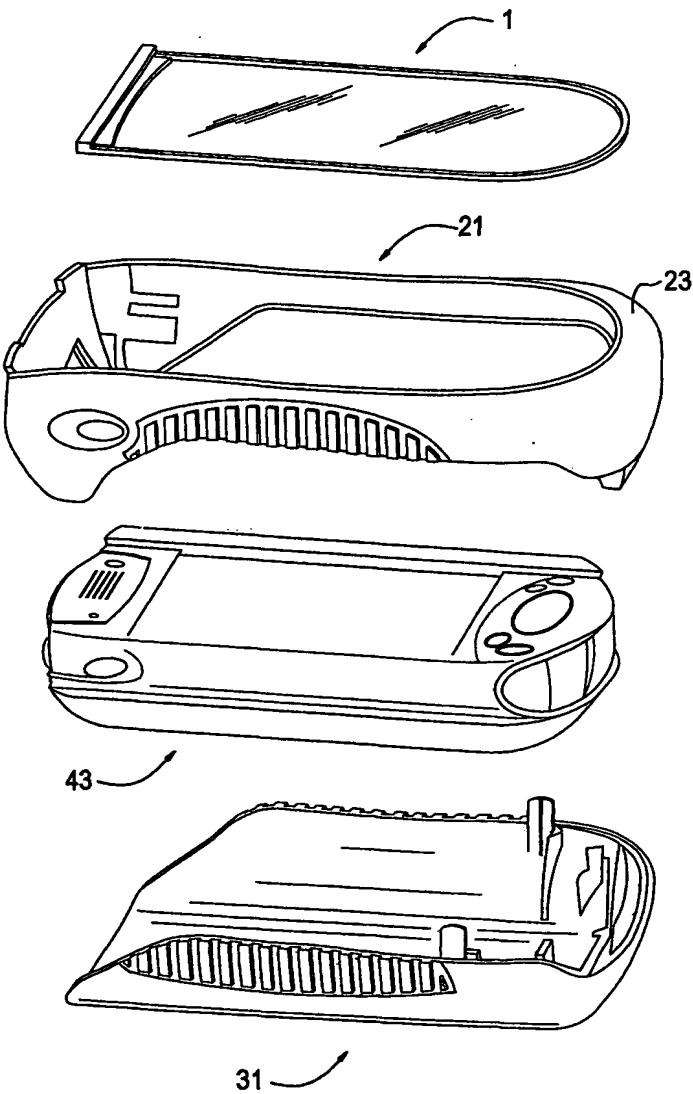


FIG. 2

**FIG. 3**



| INTERNATIONAL SEARCH REPORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                        | Inte <sup>r</sup> na <sup>l</sup> Application No<br>PCT/US 02/17728            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| A. CLASSIFICATION OF SUBJECT MATTER<br>IPC 7 H04M1/18 H05K5/06 G06F1/16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                        |                                                                                |
| According to International Patent Classification (IPC) or to both national classification and IPC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                        |                                                                                |
| B. FIELDS SEARCHED<br>Minimum documentation searched (classification system followed by classification symbols)<br>IPC 7 H04M H05K G06F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                        |                                                                                |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                        |                                                                                |
| Electronic data base consulted during the international search (name of data base and, where practical, search terms used)<br>EPO-Internal, WPI Data, PAJ, IBM-TDB, INSPEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                        |                                                                                |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                        |                                                                                |
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Citation of document, with indication, where appropriate, of the relevant passages                                                                                     | Relevant to claim No.                                                          |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | US 6 132 367 A (ADAIR EDWIN L)<br>17 October 2000 (2000-10-17)<br>column 5, line 7 - line 33<br>column 5, line 66 -column 6, line 32;<br>claim 1; figures              | 1-5                                                                            |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PATENT ABSTRACTS OF JAPAN<br>vol. 017, no. 529 (P-1618),<br>22 September 1993 (1993-09-22)<br>& JP 05 143233 A (SHARP CORP),<br>11 June 1993 (1993-06-11)<br>abstract  | 1-5                                                                            |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | WO 00 51315 A (KINNUNEN JUHA ;POKKINEN<br>KARI (FI); LESKELAE HEIKKI (FI); MODULEO<br>O) 31 August 2000 (2000-08-31)<br>page 6, line 19 - line 25; claim 1;<br>figures | 1                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -/-                                                                                                                                                                    |                                                                                |
| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Further documents are listed in the continuation of box C.                                                                                                             | <input checked="" type="checkbox"/> Patent family members are listed in annex. |
| <p>* Special categories of cited documents :</p> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority, claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> <p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>*&amp;* document member of the same patent family</p> |                                                                                                                                                                        |                                                                                |
| Date of the actual completion of the International search<br><br>19 September 2002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                        | Date of mailing of the International search report<br><br>27/09/2002           |
| Name and mailing address of the ISA<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                        | Authorized officer<br><br>Durand, J                                            |

## INTERNATIONAL SEARCH REPORT

|                 |                    |
|-----------------|--------------------|
| Inter           | nal Application No |
| PCT/US 02/17728 |                    |

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT |                                                                                                                                                                                                                                                                                           |                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Category *                                           | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                                                                                                                        | Relevant to claim No. |
| A                                                    | DE 199 25 051 A (ACKERMANN ALBERT GMBH CO)<br>7 December 2000 (2000-12-07)<br>column 4, line 49 - line 59; claims 1-3;<br>figure 2<br>_____<br>GB 2 162 355 A (HURET & FILS)<br>29 January 1986 (1986-01-29)<br>page 1, right-hand column, line 86 - line<br>99; claims; figures<br>_____ | 1,8                   |
| A                                                    |                                                                                                                                                                                                                                                                                           | 1,7                   |

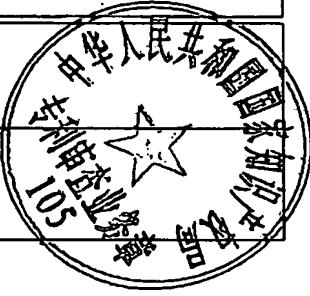
**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International Application No  
**PCT/US 02/17728**

| Patent document cited in search report | Publication date | Patent family member(s) |  | Publication date |
|----------------------------------------|------------------|-------------------------|--|------------------|
| US 6132367                             | A 17-10-2000     | US 5812188 A            |  | 22-09-1998       |
|                                        |                  | US 5957831 A            |  | 28-09-1999       |
|                                        |                  | WO 9802107 A1           |  | 22-01-1998       |
|                                        |                  | US 5873814 A            |  | 23-02-1999       |
| JP 05143233                            | A 11-06-1993     | NONE                    |  |                  |
| WO 0051315                             | A 31-08-2000     | FI 4231 U1              |  | 30-11-1999       |
|                                        |                  | AU 5425099 A            |  | 14-09-2000       |
|                                        |                  | WO 0051315 A1           |  | 31-08-2000       |
| DE 19925051                            | A 07-12-2000     | DE 19925051 A1          |  | 07-12-2000       |
|                                        |                  | WO 0072344 A1           |  | 30-11-2000       |
|                                        |                  | EP 1181702 A1           |  | 27-02-2002       |
| GB 2162355                             | A 29-01-1986     | DE 3422273 A1           |  | 19-12-1985       |
|                                        |                  | FR 2566157 A1           |  | 20-12-1985       |
|                                        |                  | IT 1183894 B            |  | 22-10-1987       |

## 中华人民共和国国家知识产权局

|                                                                                                       |                                                                                             |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 邮政编码: 100037<br>北京市阜成门外大街 2 号万通新世界广场 8 层<br>中国国际贸易促进委员会专利商标事务所<br>张祖昌<br>M040186                      | 发文日期<br> |
| 申请号: 2004100072576  |                                                                                             |

|                    |                                                                                     |
|--------------------|-------------------------------------------------------------------------------------|
| 申请人: 株式会社东芝        |  |
| 发明创造名称: 带有指点器的电子设备 |                                                                                     |

## 第一次审查意见通知书

1.  应申请人提出的实审请求,根据专利法第 35 条第 1 款的规定,国家知识产权局对上述发明专利申请进行实质审查。

根据专利法第 35 条第 2 款的规定,国家知识产权局决定自行对上述发明专利申请进行审查。

2.  申请人要求以其在:

JP 专利局的申请日 2003 年 06 月 20 日为优先权日,  
专利局的申请日 年 月 日为优先权日,  
专利局的申请日 年 月 日为优先权日,  
专利局的申请日 年 月 日为优先权日,  
专利局的申请日 年 月 日为优先权日。

申请人已经提交了经原申请国受理机关证明的第一次提出的在先申请文件的副本。

申请人尚未提交经原申请国受理机关证明的第一次提出的在先申请文件的副本,根据专利法第 30 条的规定视为未提出优先权要求。

3.  经审查,申请人:

年 月 日提交的 不符合实施细则第 51 条的规定;  
年 月 日提交的 不符合专利法第 33 条的规定;  
年 月 日提交的

4. 审查针对的申请文件:

原始申请文件。  审查是针对下述申请文件的

申请日提交的原始申请文件的权利要求第 项、说明书第 页、附图第 页; 页;  
年 月 日提交的权利要求第 项、说明书第 页、附图第 页; 页;  
年 月 日提交的权利要求第 项、说明书第 页、附图第 页; 页;  
年 月 日提交的说明书摘要, 年 月 日提交的摘要附图。

5.  本通知书是在未进行检索的情况下作出的。

本通知书是在进行了检索的情况下作出的。

本通知书引用下述对比文献(其编号在今后的审查过程中继续沿用):

| 编号 | 文件号或名称       | 公开日期(或抵触申请的申请日) |
|----|--------------|-----------------|
| 1  | JP5143233A   | 1993-06-11      |
| 2  | WO03001776A1 | 2003-01-03      |

6. 审查的结论性意见:

关于说明书:

申请的内容属于专利法第 5 条规定的不授予专利权的范围。

THIS PAGE BLANK (USPTO)

申请号 2004100072576

说明书不符合专利法第 26 条第 3 款的规定。  
说明书不符合专利法第 33 条的规定。  
说明书的撰写不符合实施细则第 18 条的规定。

关于权利要求书:

权利要求 \_\_\_\_\_ 不具备专利法第 22 条第 2 款规定的的新颖性。  
权利要求 1-12 不具备专利法第 22 条第 3 款规定的创造性。  
权利要求 \_\_\_\_\_ 不具备专利法第 22 条第 4 款规定的实用性。  
权利要求 \_\_\_\_\_ 属于专利法第 25 条规定的不授予专利权的范围。  
权利要求 \_\_\_\_\_ 不符合专利法第 26 条第 4 款的规定。  
权利要求 \_\_\_\_\_ 不符合专利法第 31 条第 1 款的规定。  
权利要求 \_\_\_\_\_ 不符合专利法第 33 条的规定。  
权利要求 \_\_\_\_\_ 不符合专利法实施细则第 2 条第 1 款关于发明的定义。  
权利要求 \_\_\_\_\_ 不符合专利法实施细则第 13 条第 1 款的规定。  
权利要求 \_\_\_\_\_ 不符合专利法实施细则第 20 条的规定。  
权利要求 \_\_\_\_\_ 不符合专利法实施细则第 21 条的规定。  
权利要求 \_\_\_\_\_ 不符合专利法实施细则第 22 条的规定。  
权利要求 \_\_\_\_\_ 不符合专利法实施细则第 23 条的规定。

上述结论性意见的具体分析见本通知书的正文部分。

7. 基于上述结论性意见, 审查员认为:

申请人应按照通知书正文部分提出的要求, 对申请文件进行修改。  
申请人应在意见陈述书中论述其专利申请可以被授予专利权的理由, 并对通知书正文部分中指出的不符合规定之处进行修改, 否则将不能授予专利权。  
专利申请中没有可以被授予专利权的实质性内容, 如果申请人没有陈述理由或者陈述理由不充分, 其申请将被驳回。

8. 申请人应注意下述事项:

(1)根据专利法第 37 条的规定, 申请人应在收到本通知书之日起的肆个月内陈述意见, 如果申请人无正当理由逾期不答复, 其申请将被视为撤回。  
(2)申请人对其申请的修改应符合专利法第 33 条的规定, 修改文本应一式两份, 其格式应符合审查指南的有关规定。  
(3)申请人的意见陈述书和/或修改文本应邮寄或递交国家知识产权局专利局受理处, 凡未邮寄或递交给受理处的文件不具备法律效力。  
(4)未经预约, 申请人和/或代理人不得前来国家知识产权局专利局与审查员举行会晤。

9. 本通知书正文部分共有 2 页, 并附有下述附件:

引用的对比文件的复印件共 2 份 18 页。

审查员: 马晓亚(9303)

2005 年 6 月 8 日

审查部门 审查协作中心

21301  
2002.8



回函请寄: 100088 北京市海淀区蔚蓝桥西土城路 8 号 国家知识产权局专利局受理处收  
(注: 凡寄给审查员个人的信函不具有法律效力)

**THIS PAGE BLANK (USPTO)**

## 第一次审查意见通知书正文

申请号：2004100072576

本发明申请涉及电子设备的触摸输入屏的构造，其发明目的是要提供一种易于更换触摸输入屏操作区上指示片的颜色和样式的电子设备。经审查，具体意见如下：

权利要求1请求保护一种电子设备。对比文件1 (JP5143233A) 公开了一种具有显示功能的电子设备，并具体公开了以下的技术特征：该电子设备包括：一个具有外壁的壳体，以及一个具有平坦的显示表面并被容纳在壳体中的显示面板（相当于本发明的指点器），其显示面板的表面被放置在壳体外壁的内表面上，在显示面板的表面上还覆盖有一透明片（参见对比文件1的全文、附图3、4、6、8、9）；该权利要求与对比文件1的区别在于：权利要求1中的所述指点器的输入表面上还设置有一可拆卸的操作区指示片，但该区别特征已被对比文件2 (W003001776A1) 公开（参见对比文件2的全文），对比文件2公开了一种用于电子设备的触摸屏（即为本发明的指点器）上的可更换的膜片，它可拆卸的设置于壳体外壁的外表面上，而且该特征在对比文件2中所起的作用与其在本发明所起的作用相同，即该技术特征也达到了使电子设备的触摸输入屏的操作区上的颜色和样式易于更换且受到保护的功效，也就是说对比文件2给出了将该技术特征用于该对比文件1以解决其技术问题的启示。由此可知，在对比文件1的基础上结合对比文件2得出该权利要求1所要求保护的技术方案，对本领域的普通技术人员来说是显而易见的，因此该权利要求1所要求保护的技术方案相对于对比文件1和2不具有突出的实质性特点和显著的进步，因而不具备专利法第二十二条第三款规定的创造性。

从属权利要求2、6、8、9是对权利要求1的进一步（直接或间接）限定，其附加技术特征均被对比文件2所披露（具体参见附图3），因此，当其引用的权利要求1不具有创造性时，权利要求2、6、8、9所要求保护的技术方案相对于对比文件1和2不具有突出的实质性特点和显著的进步，因而不具备专利法第二十二条第三款规定的创造性。

从属权利要求3、4是对权利要求1的进一步限定，其附加特征为非结构技术特征，因此，当其引用的权利要求1不具有创造性时，权利要求3、4所要求保护的技术方案相对于对比文件1和2也不具备专利法第二十二条第三款规定的创造性。

从属权利要求5是对权利要求1的进一步限定，其附加特征为公知公用，对于所属领域的普通技术人员来说，在对比文件1和2的基础上结合公知常识形成权利要求5所要求保护的技术方案并不需要花费创造性的劳动，因此，当其引用的权利要求1不具有创造性时，权利要求5相对于对比文件1和2也不具备专利法第二十二条第三款规定的创造

**THIS PAGE BLANK (USPTO)**

性。

从属权利要求7、10—12的附加技术特征，对于所属领域的普通技术人员来说，为了便于剥离所述操作区指示片，在靠近其边缘的对应位置上设计一手指状凹陷部，属于常规设计手段，因此，该领域的普通技术人员在对比文件1和2的基础上结合常规设计手段形成权利要求7、10—12所要求保护的技术方案并不需要花费创造性的劳动，即权利要求7、10—12相对于对比文件1和2不具有突出的实质性特点和显著的进步，因而不具备专利法第二十二条第三款规定的创造性。

基于上述理由，本申请的独立权利要求以及从属权利要求都不具备创造性，本申请不具备被授予专利权的前景。如果申请人不能在本通知书规定的答复期限内提出表明本申请具有新颖性和创造性的充分理由或提交不出足以能够克服上述缺陷的修改文本，本申请将被驳回。

**THIS PAGE BLANK (USPTO)**